

LIQUID CRYSTAL DISPLAYS USING ORGANIC INSULATING MATERIAL AND MANUFACTURING METHODS THEREOF

ABSTRACT OF THE DISCLOSURE

5 A passivation layer is formed by coating a flowable insulating material on the substrate where a thin film transistor and a storage capacitor electrode, and a pixel electrode is formed on the passivation layer. A portion of the passivation layer is etched using the pixel electrode as a mask to make a groove on the thin film transistor, and then a black matrix is formed by filling an
10 organic black photoresist in the groove. To increase the storage capacitance, a portion of the passivation layer is removed or to form a metal pattern on the storage capacitor electrode. A flowable insulating material is used as a gate insulating layer to planarize the substrate. In the case of the etch stopper type thin film transistor, a photo definable material is used as the etch stopper layer
15 to reduce the parasitic capacitance between the gate electrode and the drain electrode.